Abstract

The present invention provides a method of transporting a pharmacologically active peptide across the blood brain barrier by administering ~~administration~~ to a living subject ~~of~~ a conjugate molecule ~~comprising the peptide covalently linked to a non peptide mu (μ) opioid receptor agonist, such as using an opioid moiety of chemically modified morphine (3), that binds to and activates the human mu-opioid receptor, with the opioid moiety linked through a novel linker hinge (4) to the other moiety~~ of a general class of chimeric hybrid conjugate molecules capable of simultaneous activation of MOR and SPR receptors within the CNS that is intrinsically a function of this class of molecules to permeate the mammalian BBB as an intact chemical entity. Accordingly, the chemical and pharmacological integrity of each of the receptor activating domains functionally enables BBB transport of its covalently bonded reciprocal receptor activating domain. As such, the requirement for an intact chimeric hybrid conjugate molecule as the only viable transport vehicle for equivalent BBB transport of each of its MOR and SPR receptor activation domains distinguishes the present invention as novel and unknown to the literature of CNS analgesic and anti-abuse drugs.

Schematic of non-peptide opioid alkaloid and substance P chimeric hybrid conjugate molecule

Non-peptide opioid alkaloid	Molecular linker	Active fragment of substance P

Fig. 1

Schematic of mu opioid receptor preferring opioid peptide and non-peptide substance P receptor activating chimeric hybrid conjugate molecule

Mu opioid receptor-preferring opioid peptide	Molecular linker	Non-peptide substance P receptor activating domain

Fig. 2